

# Flooding and Low Impact Development In Flagstaff



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# Stormwater Programs

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- Capital Improvements
- Drainage Maintenance
- Floodplain Management
- Drainage Investigations
- Development Permitting



# Stormwater Responsibility

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## Regional Plan Policy

- Policy WR.5.7. Support healthy watershed characteristics through implementation of practices, consistent with the City of Flagstaff Low Impact Design Manual, that improve flood control and flood attenuation, stormwater quality, and water sustainability; increase groundwater recharge; enhance open space quality; increase biodiversity; and reduce land disturbance and soil compaction.





# LID Implementation History

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- February 2009 retention requirement adopted
- March 2010 ½" of retention required
- March 2011 1" of retention implemented



# LID Goals

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- Reduce impacts from development
  - Increased Runoff
  - Increased Pollution
- LID
  - Reduces volumetric flooding
  - Decreases Pollution

# Volumetric Flooding

**Infrastructure unable to pass storm volume**



Route 66 at Clay Ave.



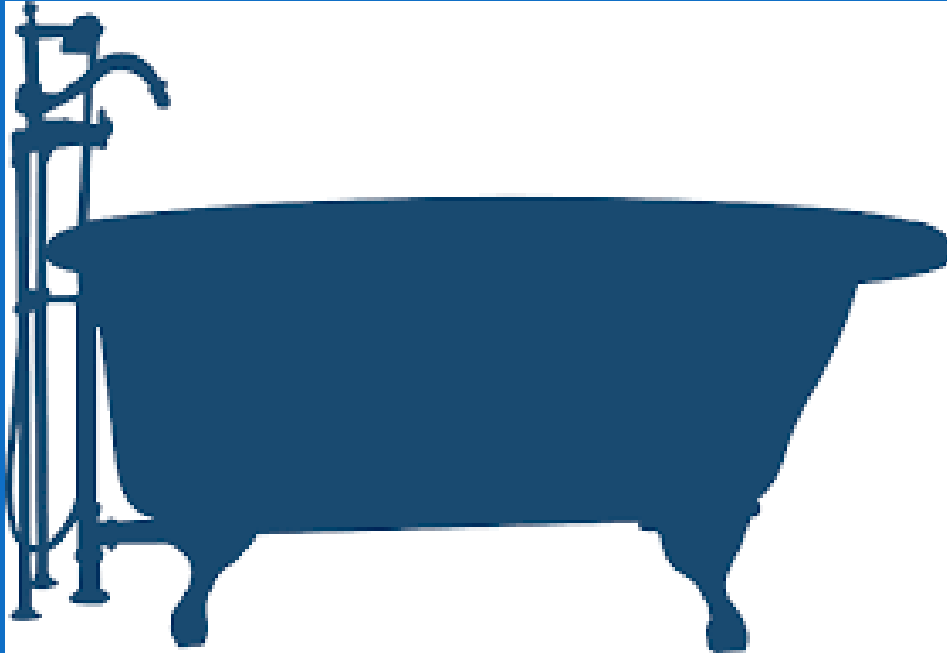
Lake Continental

**Bathtub Effect**



# Bathtub Effect

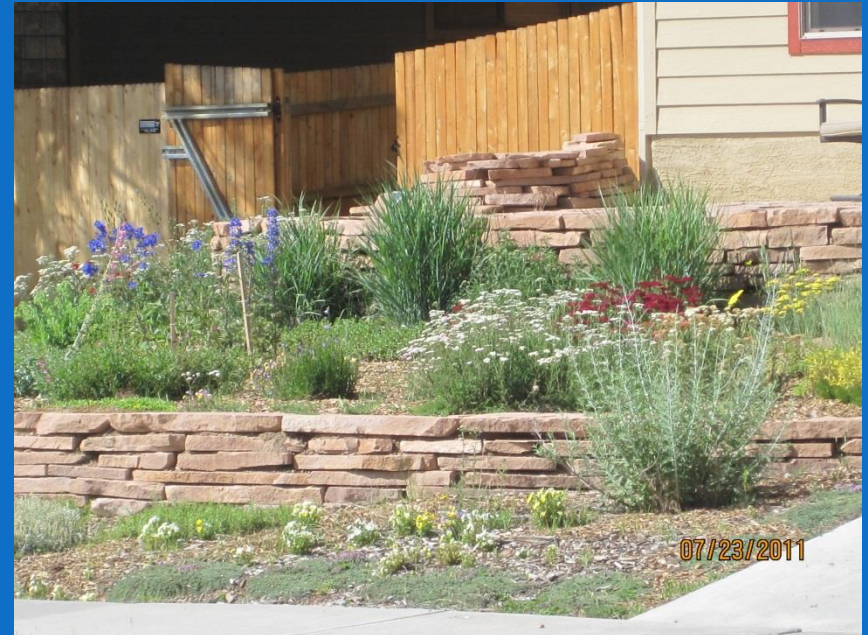
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# Benefit of LID Water Quality

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- Reduces nonpoint pollution
- Provides filtration
- Recharges groundwater
- Tied to MS4





# Benefit of LID Flood Reduction

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- LID mitigates new development impacts on volumetric flooding
- Delays for costly infrastructure investment

# Development Requirements

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## Requirements:

- Mitigate 1" of runoff from new impervious surfaces
- Eliminates 2yr storm detention requirement

# Stormwater impacts without LID



Bow & Arrow

- Increased volumetric flooding
- Increased replacement of undersized infrastructure
- Increased non-point pollution



# Questions?

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